third line serving to ground excess current from each electrode.

It may also be observed that using a different resistor network makes it possible to directly obtain not only orthogonal co-ordinates, but also oblique, triangular, etc. coordinates.

The resistive surface **10** need not be disk-shaped, for example it could be rectangular or square, and it would still be possible to devise a purely resistive summing network giving rise to analog signals which are linear functions of the desired co-ordinates. In all cases, distortion is eliminated by appropriately adjusting resistance values, except for within a peripheral margin whose width is less than the distance between electrodes.

A computer simulation program has been written. Its results match those obtained by experiment on the above-described disk-shaped resistive surface.

An embodiment of a device in accordance with the invention using a square resistive surface **10'** is shown in FIG. **6**. In order to simplify the diagram, only one-fourth of a square plate is shown, with the remainder being symmetrical about the axes x'x and y'y.

In the example shown, the resistive plate **10'** is square in shape and is provided with 32 electrodes E'-**1** to E'-**32** which are uniformly distributed around its periphery, with one electrode being disposed at each corner.

A resistive network **20'** connects the electrodes E'-**1** to E'-**32** to four summing lines L'-**1** to L'-**4**. Each electrode E'-n' (where n' takes all values from 1 to 32) is connected to each summing line L'-**1'** (where **1'** takes the values 1 to 4) via a respective resistor R'(n', 1'). The resistances of the resistors R'(n', 1') are selected so as to provide currents on the summing lines L'-**1**, L'-**2**, L'-**3**, and L'-**4** which are linear functions of Y, −X, −Y, and X, where X and Y are the co-ordinates of a point at which current or charge is being injected into the resistive surface **10'** relative to the system of co-ordinates (x'x, y'y). The signals available on the summing lines L'-**1** to L'-**4** are processed in exactly the same way as described above with reference to the FIG. **1** embodiment.

The above-mentioned computer simulation program has been used to determine the optimum resistances values for the resistors R'(n', 1') and to evaluate the residual distortion.

Table 2 at the end of this description gives the theoretical resistance values for R'(n', 1') connecting the electrodes E'-**1** to E'-**8** visible in FIG. **6** to the four summing lines.

FIG. **6** shows two superposed grids on the surface **10'**, one of them is a square grid and the other represents the image of the square grid as obtained using the above-mentioned simulation program. If a distortion margin whose width is slightly less than the inter-electrode pitch is ignored, then no distortion is visible in the image obtained. This is in conformity with the results as verified experimentally using the disk-shaped resistive surface **10**.

TABLE 1

Resitance values R(n, l) in network 20 (FIG. 1)

$$1/R(n,l) = \frac{G}{4}\left(1 + \cos\left(\frac{n}{N}2\pi - \frac{l}{4}2\pi\right)\right)$$

where:
1/G = 135 ohms, n varies from 1 to N = 32, l varies from 1 to 4.

(n, l)	R (n, l) theorical (ohms)	R (n, l) practical (ohms)
(1,1), (9,2), (17,3), (25,4) (7,4), (15,1), (23,2), (31,3)	452	470
(1,2), (9,3), (17,4), (25,1) (7,3), (15,4), (23,1), (31,2)	28104	27000
(1,3), (9,4), (17,1), (25,2) (7,2), (15,3), (23,4), (31,1)	671	680
(1,4), (9,1), (17,2), (25,3) (7,1), (15,2), (23,3), (31,4)	273	270
(2,1), (10,2), (18,3), (26,4) (6,4), (14,1), (22,2), (30,3)	391	390
(2,2), (10,3), (18,4), (26,1) (6,3), (14,4), (22,1), (30,2)	7095	6800
(2,3), (10,4), (18,1), (26,2) (6,2), (14,3), (22,4), (30,1)	875	910
(2,4), (10,1), (18,2), (26,3) (6,1), (14,2), (22,3), (30,4)	281	270
(3,1), (11,2), (19,3), (27,4) (5,4), (13,1), (21,2), (29,3)	347	330
(3,2), (11,3), (19,4), (27,1) (5,3), (13,4), (27,1), (29,2)	3204	3300
(3,3), (11,4), (19,1), (27,2) (5,2), (13,3), (21,4), (29,1)	1215	1200
(3,4), (11,1), (19,2), (27,3) (5,1), (13,2), (21,3), (29,4)	295	270
(4,1), (12,2), (20,3), (28,4) (4,4), (12,1), (20,2), (28,3)	316	330
(4,2), (12,3), (20,4), (28,1) (4,3), (12,4), (20,1), (28,2)	1844	1800
(8,1), (16,2), (24,3), (32,4)	270	270
(8,2), (16,3), (24,4), (32,1) (8,4), (16,1), (24,2), (32,3)	540	560
(8,3), (16,4), (24,1), (32,2)	infinite	infinite

TABLE 2

Resistance values R'(n',1') in network 20' (FIG. 6)
The following values were determined with reference to a surface resistivity R□ = 6200 ohms per square and to resistive amplifier input impedances Z = 5 ohms.

(n', 1')	R'(n',1') (ohms)	(n', 1')	R'(n',1') (ohms)
(1,2),(2,2),(3,2),(4,2), (4,3),(5,3),(6,3),(7,3), (8,3)	infinite or not connected	(2,1),(6,4)	342
(5,2),(3,3)	1342	(3,1),(5,4)	401
(6,2),(2,3)	865	(4,1),(4,4)	250
(7,2),(1,3)	622	(5,1),(3,4)	258
(8,2),(8,4)	489	(6,1),(2,4)	255
(1,1),(7,4)	296	(7,1),(1,4),(8,1)	256

We claim:

1. A device for two-dimensional localization of current-generating events on a resistive surface, the device comprising:

a resistive surface;

a plurality of electrodes fixed to the resistive surface around its periphery in order to pick up currents generated by injecting current or electric charge into points on the resistive surface; and

at least three current summing lines connected to the electrodes via discrete resistive components in such a manner as to obtain analog signals on said summing lines whose amplitudes are functions of the